

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A reconfigurable filter comprising:
a plurality of elements including a configurable element and configured to provide a filter circuit based on an interconnection of the plurality of elements, the configurable element including at least two filter components and a switch configured to selectively couple one of the at least two filter components to the filter circuit; and

a switch control module configured to generate a pseudo random switch control signal to control the switch in the configurable element to selectively switch between two filter components, a value of the configurable element based in part on a percentage of time that the switch control signal selectively couples a first of the at least two filter components to the filter circuit.

2. (Original) The filter of claim 1, wherein the filter circuit comprises an active filter circuit.

3. (Original) The filter of claim 1, wherein the filter circuit comprises a passive filter circuit.

4. (Original) The filter of claim 1, wherein the plurality of elements is configured to provide a baseband filter.

5. (Original) The filter of claim 1, wherein the configurable element comprises two like components of different values and the switch, and wherein the switch is configured to couple one of the two like components to the filter circuit.

6. (Original) The filter of claim 1, wherein the configurable element comprises two like components of different values, each of the like components selected from the list comprising a resistor, a capacitor, an inductor, and a transconductance element.

7. (Original) The filter of claim 1, wherein the switch control module generates the switch control signal having a switch control frequency greater than a passband frequency of the filter.

8. (Original) The filter of claim 1, wherein the switch control module generates the switch control signal having a switch control frequency that lies outside a passband of the filter.

9. (Original) The filter of claim 1, wherein the switch control module generates a periodic switch control signal.

10. (Original) The filter of claim 9, wherein the switch control module varies a duty cycle of the periodic switch control signal.

11. (Canceled)

12. (Original) The filter of claim 1, wherein the filter circuit comprises a lowpass filter, and the switch control module is configured to generate the switch control signal to produce one of a plurality of predetermined frequency responses.

13. (Original) A reconfigurable filter comprising:
a first configuration of elements configured to provide a first filter response;
a second configuration of elements configured to provide a second filter response different from the first filter response;

at least one switch configured to selectively switch between the first configuration and the second configuration; and

a switch control module configured to generate at least one switch control signal comprising a pseudo random sequence to control the position of the at least one switch.

14. (Original) The reconfigurable filter of claim 13, wherein the switch control module comprises a pseudo random modulator.

15. (Original) The reconfigurable filter of claim 13, wherein the switch control module comprises a delta-sigma modulator.

16. (Original) The reconfigurable filter of claim 15, wherein the delta sigma modulator comprises a latch clocked at a rate greater than a passband frequency of the first filter response.

17. (Original) The reconfigurable filter of claim 15, wherein the delta sigma modulator comprises a latch clocked at a rate that lies outside a passband of the first and second filter responses.

18. (Original) A reconfigurable filter comprising:

a configurable element comprising:

a first filter component in series with a first switch; and

a second filter component in series with a second switch, the second filter component and second switch connected in parallel with the first filter component and first switch;

at least one fixed filter element arranged with the configurable element to produce a filter circuit; and

a switch control module configured to generate a pseudo random switch control signal to control the first and second switches to selectively switch between the first and second switch components.

19. (Original) The reconfigurable filter of claim 18, wherein a value of the configurable element is based at least in part on a fractional allocation of the pseudo random switch control signal to a first signal level.

20. (Currently Amended) A reconfigurable filter comprising:

at least one configurable element having a value based in part on a fractional period in which a control signal is at a first signal level;

a delta sigma modulator configured to generate a pseudo random output as the control signal, the delta sigma modulator including a variable voltage source, and an output of

the variable voltage source controlling a distribution of first and second signal levels output by the delta sigma modulator; and

a filter element coupled to the at least one configurable element to produce a filter circuit.

21. (Currently Amended) A method of configuring a filter response, the method comprising:

determining a first filter response corresponding to a first switch configuration of at least one configurable element;

determining a second filter response corresponding to a second switch configuration of the at least one configurable element;

determining a desired filter response having a frequency response between the first filter response and the second filter response;

determining a fractional switching time that produces the desired filter response;
and

selectively switching between the first switch configuration and the second switch configuration based on a pseudo random switching signal that controls the switches to the first switch configuration for the fractional switching time

selectively switching between the first switch configuration and the second switch configuration to produce the desired filter response.

22. (Original) The method of claim 21, wherein the first filter response comprises a broad filter configuration.

23. (Original) The method of claim 21, wherein the second filter response comprises a narrow filter configuration.

24. (Canceled)

25. (Currently Amended) An RF integrated circuit having a multimode frequency response, the circuit comprising:

an amplifier configured to receive an RF signal;

a mixer coupled to the output of the amplifier and configured to frequency convert the RF signal; and

a reconfigurable filter coupled to an output of the mixer, the reconfigurable filter comprising:

a plurality of elements including a configurable element and configured to provide a filter circuit based on an interconnection of the plurality of elements, the configurable element including at least two filter components and a switch configured to selectively couple one of the at least two filter components to the filter circuit; and

a switch control module configured to generate a switch control signal comprising a pseudo random bit sequence to control the switch in the configurable element to selectively switch between two filter components, a value of the configurable element based in part on the switch control signal.

26. (Currently Amended) A baseband processor integrated circuit having a multimode frequency response, the integrated circuit comprising:

a reconfigurable filter comprising:

at least one configurable element having a value based in part on a fractional period in which a pseudo random control signal is at a first signal level; and

a filter element coupled to the at least one configurable element to produce a filter circuit;

a demodulator coupled to the output of the reconfigurable filter; and

a baseband processor coupled to the output of the demodulator and configured to generate a mode select signal that controls, in part, the fractional period in which the pseudo random control signal is at the first signal level.